Digitized by the Internet Archive
in 2014

https://archive.org/details/annualreportofne7319newy

THE
NEW YORK
ZOOLOGICAL
SOCIETY
ANNUAL REPORT
1968

LIBRARY - NEW YORK
ZOOLOGICAL SOCIETY

BOARD OF TRUSTEES

City of New York
Ex-officio

HON. JOHN V. LINDSAY, *The Mayor*
HON. AUGUST HECKSCHER,
Administrator of Recreation and Cultural Affairs & Commissioner of Parks

Class of 1969

ROBERT E. BLUM
GUY F. CARY
WILLIAM R. COE
C. SUYDAM CUTTING
HENRY CLAY FRICK, II
ANTHONY D. MARSHALL
OTTO MARX, JR.
DAVID HUNTER McALPIN
G. W. MERCK
AUGUSTUS G. PAINE, II
JOHN H. PHIPPS
ALFRED G. VANDERBILT

Class of 1970

ALEXANDER ALDRICH
GEORGE F. BAKER, JR.
JOHN ELLIOTT
ROBERT I. GANNON, S. J.
PETER GRIMM
FAIRFIELD OSBORN
EBEN W. PYNE
LAURANCE S. ROCKEFELLER
JOHN M. SCHIFF
HENRY SEARS
JOSEPH A. THOMAS
ROBERT WINTHROP

Class of 1971

CHARLES W. ENGELHARD
PETER R. GIMBEL
ROBERT G. GOELET
JOHN N. IRWIN, II
WARREN KINNEY
PETER MATTHIESSEN
CHARLES W. NICHOLS, JR.
HOWARD PHIPPS, JR.
JOHN PIERREPONT
DAVID T. SCHIFF
CHAUNCEY STILLMAN
LANDON K. THORNE, JR.

OFFICERS OF THE SOCIETY

FAIRFIELD OSBORN, *President*
LAURANCE S. ROCKEFELLER, *First Vice-President*
HENRY CLAY FRICK, II, *Vice-President*
ROBERT G. GOELET, *Vice-President*
HOWARD PHIPPS, JR., *Secretary*
HAROLD C. PALMER, *Assistant Secretary*
JOHN PIERREPONT, *Treasurer*
EBEN W. PYNE, *Assistant Treasurer*

EXECUTIVE COMMITTEE

ROBERT G. GOELET, *Chairman*
GEORGE F. BAKER, JR.
HENRY CLAY FRICK, II
PETER R. GIMBEL
AUGUST HECKSCHER, *ex-officio*
JOHN N. IRWIN, II
CHARLES W. NICHOLS, JR.
FAIRFIELD OSBORN, *ex-officio*
HOWARD PHIPPS, JR., *ex-officio*
JOHN PIERREPONT, *ex-officio*
LAURANCE S. ROCKEFELLER

PENSION BOARD

FAIRFIELD OSBORN, *Chairman*
WILLIAM G. CONWAY
WALTER LERCHENFELD
JOHN McKEW
ROSS F. NIGRELLI
HOWARD PHIPPS, JR.
JOHN PIERREPONT
EBEN W. PYNE
WILLIAM SOUHRADA

COMMITTEES OF THE SOCIETY

NOMINATING COMMITTEE FOR BOARD OF TRUSTEES

E. ROLAND HARRIMAN, *Chairman*
ELI WHITNEY DEBEVOISE
B. DANFORTH ELY

FINANCE COMMITTEE

AUGUSTUS G. PAINE, II, *Chairman*
JOHN ELLIOTT
FAIRFIELD OSBORN, *ex-officio*
JOHN PIERREPONT, *ex-officio*
EBEN W. PYNE
JOHN M. SCHIFF

AUDITING COMMITTEE

GEORGE F. BAKER, JR., *Chairman*
JOHN ELLIOTT
FAIRFIELD OSBORN, *ex-officio*
HOWARD PHIPPS, JR., *ex-officio*

EDITORIAL COMMITTEE

FAIRFIELD OSBORN, *Chairman*
WILLIAM G. CONWAY
LEE S. CRANDALL
DONALD R. GRIFFIN
HUGH B. HOUSE
PETER R. MARLER
ROSS F. NIGRELLI
EDWARD R. RICCIUTI

HEADS AND HORNS COMMITTEE

WILLIAM G. CONWAY
LAURANCE S. ROCKEFELLER
SAMUEL B. WEBB
F. CARRINGTON WEEMS

STAFF

WILLIAM G. CONWAY, *General Director*

ZOOLOGICAL PARK

WILLIAM G. CONWAY, *Director & Curator, Ornithology*
CHARLES P. GANDAL, *Veterinarian*
HUGH B. HOUSE, *Curator, Mammalogy*
GRACE DAVALL, *Assistant Curator, Mammals & Birds*
JAMES G. DOHERTY, *Mammalogist*
JOSEPH BELL, *Associate Curator, Ornithology*
DONALD F. BRUNING, *Ornithologist*
F. WAYNE KING, *Curator, Herpetology*
HERBERT J. KNOBLOCH, *Curator, Education*
JOSEPH A. DAVIS, JR., *Scientific Assistant to the Director*
CHARLES B. DRISCOLL, *Superintendent, Operations*
EDWARD KEARNEY, *Manager, Facilities Department*
LEE S. CRANDALL, *General Curator Emeritus*
WILLIAM BRIDGES, *Curator of Publications Emeritus*
ROLAND LINDEMANN, *Consultant, Mammal Management*
JOHN M. BUDINGER, *Consultant, Pathology*
BEN SHEFFY, *Consultant, Nutrition*

AQUARIUM

ROSS F. NIGRELLI, *Director*
NIXON GRIFFIS, *Administrative Assistant*
ROBERT A. MORRIS, *Curator*
U. ERICH FRIESE, *Assistant Curator*
LARS MELLKVIST, *Superintendent, Operations*
JEWELL BUNGAY, *Business Manager*
LOUIS MOWBRAY, *Associate in Field Biology*
CHRISTOPHER W. COATES, *Director Emeritus*
JAY HYMAN, *Consultant, Veterinary Medicine*

OSBORN LABORATORIES OF MARINE SCIENCES

ROSS F. NIGRELLI, *Director & Pathologist*
MARTIN F. STEMPIEN, JR., *Assistant to the Director & Research Associate, Bio-Organic Chemistry*
GEORGE D. RUGGIERI, S.J., *Coordinator of Research*
WILLIAM ANTOPOL, *Research Associate, Comparative Pathology*
C. M. BREDER, JR., *Research Associate, Ichthyology*
JACK T. CECIL, *Research Associate, Marine Virology*
HARRY A. CHARIPPER, *Research Associate, Histology*
KENNETH GOLD, *Research Associate, Radiation Ecology*
MYRON JACOBS, *Neuroanatomist*
EVA K. HAWKINS, *Algologist*
JAY HYMAN, *Research Associate, Comparative Pathology*
KLAUS KALLMAN, *Fish Geneticist*
VINCENT LIGUORI, *Microbiologist*
JOHN J. A. McLAUGHLIN, *Research Associate, Planktonology*
MARTIN P. SCHREIBMAN, *Research Associate, Fish Endocrinology*

INSTITUTE FOR RESEARCH IN ANIMAL BEHAVIOR

[Jointly operated by the Society and The Rockefeller University, and including the Society's William Beebe Tropical Research Station, Trinidad, West Indies]

DONALD R. GRIFFIN, *Director & Senior Research Zoologist*
PETER R. MARLER, *Senior Research Zoologist*
JOCELYN CRANE, *Senior Research Ethologist*
ROGER S. PAYNE, *Research Zoologist*
RICHARD L. PENNEY, *Research Zoologist*
FERNANDO NOTTEBOHM, *Research Zoologist*
GEORGE SCHALLER, *Research Zoologist*
THOMAS T. STRUHSAKER, *Research Zoologist*
C. ALAN LILL, *Research Fellow*
O. MARCUS BUCHANAN, *Resident Director, William Beebe Tropical Research Station*

GENERAL

WALTER LERCHENFELD, *Comptroller*
BERNARD M. FAGAN, *Accounting Manager*
JOHN McKEW, *Assistant to the Director, Zoological Park*
FRANK MANHART, JR., *Personnel Manager*
GORDON CUYLER, *Membership Chairman & Administrative Associate*
JERRY M. JOHNSON, *Curator, Department of Exhibition and Graphic Arts*
EDWARD R. RICCIUTI, *Editor & Curator, Publications & Public Relations*
JOAN VAN HAASTEREN, *Editorial Assistant*
DOROTHY REVILLE, *Photo Librarian*
SAM DUNTON, *Photographer*

AFFILIATE

JACKSON HOLE BIOLOGICAL RESEARCH STATION

Founded by the New York Zoological Society in 1947 and under the sponsorship of the Society and the University of Wyoming

L. FLOYD CLARKE, *Director*

NEW YORK ZOOLOGICAL SOCIETY • SEVENTY-THIRD ANNUAL REPORT • 1968

EDUCATION
CONSERVATION
RESEARCH

THE NEW YORK ZOOLOGICAL SOCIETY
THE ZOOLOGICAL PARK
BRONX, NEW YORK 10460

REPORT OF THE PRESIDENT

In times like the present, so filled with negative events both in this country and abroad, it is a relief to render this report regarding the society's affairs during 1968.

It has been a constructive year, highlighted by the addition of new exhibits at the zoo and the aquarium as well as the completion of plans for the further development of both institutions. At the same time progress has been made in other fields that are part of the society's interests and purposes, such as the advancement of scientific work at the Osborn Laboratories of Marine Sciences and the Institute for Research in Animal Behavior. Lastly, and of key importance today, our organization has worked actively for the protection of wildlife in various parts of the world.

However, nothing in the above is intended to imply that the society itself does not have difficult problems, which will be described later in this report.

Our institution is going through one of the most interesting and challenging periods in its history. New ideas are evolving as to ways through which the society can more richly and fruitfully fulfill the purposes that are defined in its charter—the operation of the two great public institutions, the zoo and the aquarium, the advancement of zoological knowledge, scientific research, and wildlife protection. To borrow a biological term, the society is in a period of "progressive evolution." The challenge is great.

One way to meet this challenge is to consider how both the zoological park and the aquarium can help. The answer is well expressed in an article by William Conway, the general director, entitled "Zoos: Their Changing Roles." This important article will, we hope, be widely read by both our membership and others. It casts additional light upon what a zoo or an aquarium can and should be.

Wildlife Protection

Since its earliest days the society has actively engaged itself in this highly important cause. The need for protecting and insuring the continued existence of wild animals in their natural habitats becomes more urgent as each year passes. Negative forces, principally the rapid growth of populations throughout the world, press ever more acutely upon the natural areas that are the last harbors in which wildlife can continue to exist. As a result, it has become evident that the best if not the only long-term cure lies in the establishment of national parks or similar reserves created and supported by governmental action. This has been clearly demonstrated in the United States and other countries. In our country, for instance, without national parks and reserves it is doubtful whether species such as elk, bighorn sheep, Rocky Mountain goat, and grizzly bear would still exist.

As a consequence, a large proportion of the funds the society has available for this purpose has been used to help national parks in East Africa, with its incomparable concentration of mammalian and avian fauna, as well as in other countries.

It is highly encouraging to witness the widespread and growing interest today in this important cause. The society's work in Africa has been greatly aided by the contributions it has received. Over the last three years such contributions to the African Wildlife Fund of the society have totalled $175,021.

FINANCES

The problems referred to in the opening statements of this report are not of the society's making but stem from outside forces that are completely beyond its control. They are pervasive and are seriously affecting every element and activity in our country today—including federal, state, and municipal governments, innumerable independent organizations, and all individual citizens. In a time that is spoken of as one of "unprecedented prosperity," there remains the pervasive question "how to make ends meet" —a contradiction in terms if there ever was one. The cause of all this is, obviously, the inflationary spiral resulting in continuing and rapid increases of costs of all kinds.

The consequences are far-reaching and in one way or another seriously affect the operations of our society as they do all independent institutions, such as universities, medical schools, hospitals, and cultural institutions. A clarification of this general statement is timely here through citing some examples of the consequences to our society. For instance, the New York City government, with its own serious financial problems, has not provided its due and basic share to meet the costs of the operations of the zoo and aquarium. As a further example, the federal government is reducing its appropriations for scientific research and, consequently, the grants made by the National Institutes of Health and the National Science Foundation that have heretofore been helpful to the activities of the Osborn Laboratories and the Institute for Research in Animal Behavior are being curtailed. Lastly, the cost of new construction has, within recent years, risen so rapidly that it impedes the society's plans that are of such importance in its general development program.

Accelerating costs are also affecting the society's operating budget with the result that the society now faces rapidly increasing deficits. Previous operational deficits of any importance were episodic—such as those that occurred for a while when the new aquarium opened. Due in the main to the large growth in public attendance, resulting in greatly increased revenues from admission charges, this situation is now remedied and the aquarium is virtually self-supporting.

Fund Campaign

As a counter-move to these conditions, there was launched in 1961 a fund campaign with a goal of $7,000,000. This was successful, the final total reaching somewhat more than $9,000,000. That campaign was substantially aided by a legacy of $1,800,000 from the late Mr. Elmer C. Otto, a member of the society. This money has been placed in the Endowment Fund.

In June, a second fund campaign was launched, with a goal of $9,000,000. At the close of the year $2,066,394 has been paid in or pledged. Of this amount 55.5% has been given by trustees of the society, most of the balance from several foundations.

There is no question that our institution is in one of the most interesting and creative periods in its history. Great opportunities lie ahead. These can surely be realized, yet their accomplishment depends upon the generosity of those who recognize and deeply believe in the unique values of the society's work. Fortunately, great numbers of individuals and foundations do. Consequently, there is every reason to have confidence that the society, with the financial support now so greatly needed, will continue to grow and prosper.

MEMBERSHIP

The number of members has again increased—to 7,352, a new high. So-called membership promotion is done by a committee of staff members at minimal cost, a practice that has been followed since the early 1940's.

In 1940 it was necessary to take drastic action because the number of members had fallen to less than 1,000. A sizable appropriation was made at that time to publicize the work of the society and correct this existing unfortunate situation. This effort proved successful and started a steady year by year growth in membership.

Some organizations, it is true, through the employment of outside professional firms, spend substantial sums of money in membership promotion. It is distinctly questionable whether the results justify the costs involved.

A NEW ADMINISTRATION

At the annual mid-winter meeting of the Board of Trustees, held on December 12th, the following elections for the coming year were unanimously voted:

LAURANCE S. ROCKEFELLER	*President*
ROBERT G. GOELET	*Executive Vice President and Chairman of the Executive Committee*
HENRY CLAY FRICK	*Vice President*
JOHN PIERREPONT	*Treasurer*
HOWARD PHIPPS, JR.	*Secretary*
EBEN W. PYNE	*Assistant Treasurer*
HAROLD C. PALMER	*Assistant Secretary*
WILLIAM G. CONWAY	*General Director*

No news could be more welcome than that Laurance S. Rockefeller will be the society's new president.

Mr. Rockefeller's recognition of the unusual values of the society's work first occurred in 1935 when he became a member of the board of trustees. In 1937 he was elected to membership of the executive committee, and in 1940 he became chairman of this committee and served in this capacity until last year.

During Mr. Rockefeller's long association with the activities of our institution, it has benefited immeasurably by his practical and keen judgment as well as his foresight and vision concerning its future.

It is also highly gratifying that Robert G. Goelet with take on the responsibilities involved in the executive vice-presidency. Mr. Goelet became a trustee of the society in 1951 and the following year was elected a member of the executive committee. Last year he assumed the chairmanship of this committee, succeeding Mr. Rockefeller.

It is unusual that an institution such as ours has so many trustees that show constant interest and devote so much of their time to its affairs.

Special mention must be made of the importance of William G. Conway's services as general director of the society. Both his knowledge of and long experience in the management of wild animals, supplemented by his administrative talents, contribute significantly to the advancement of the society's work.

Guy F. Cary has been elected to membership on the board of trustees.

CONCLUDING REMARKS

This is my 28th and final report as president of the society.

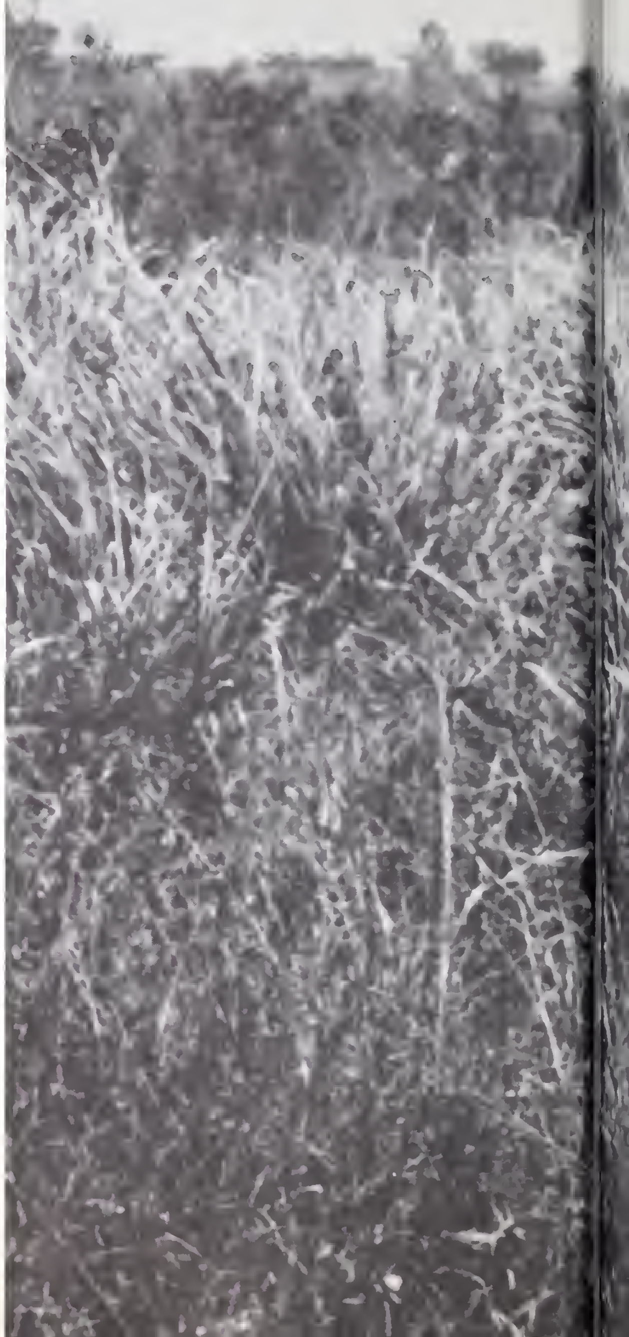
In concluding it, two thoughts are uppermost in my mind—one purely personal, the other pertaining to the society itself.

First, I wish to express my profound gratitude for having had the opportunity of serving the society as its president for so many years. No other experience could have proved more rewarding. What I have been able to accomplish has largely been made possible by the assistance and support accorded me by my co-officers, by the trustees, and by the experience and knowledge of members of our staff. For all of this I feel a deep appreciation which cannot be expressed in words.

My other thought concerns the society. In my first address to the annual meeting of members, I stated that a great "destiny" lay ahead for our institution. This statement continues to be as valid today as at the time it was made.

Fairfield Osborn

FAIRFIELD OSBORN
December 1968


MR. AND MRS. FAIRFIELD OSBORN
ON AFRICAN SAFARI

REPORT OF THE GENERAL DIRECTOR

Zoos and aquariums are entering the most significant period in their history; a time in which their potential importance clearly exceeds that of any other kind of museum. Too often considered but a place to take the children to spend a pleasant summer afternoon, zoos *have actually become urban man's only real contact with living wild creatures* other than the "pest" species that have colonized his cities. Most zoos and aquariums, however, are only now awakening to their awesome responsibilities in public education, in the conservation of diminishing species, in research, and in providing meaningful recreation, as opposed to the artifically contrived recreation offered by amusement parks.

Even if zoos had not been established for education and recreation, they would be instituted today as sanctuaries for the growing number of species threatened with extinction. Increasingly, the potential of zoos and aquariums for research upon forms of life not readily maintained in conventional laboratories is being recognized—and it is about time. It is remarkable that museums holding collections of dead animals have always been deemed places worthy of research and study while living collections of animals have frequently been relegated to the status of mere amusement.

Clearly, in the overpopulated, increasingly urbanized years ahead, the most important function of the zoo and aquarium will be to give city man some familiarity with the world of nature; to command his interest in the living things that share in his biological background; to offer him the opportunity to know and to enjoy the beauty and the awe of wild animals.

For man's environment, and thus for man, much depends upon this confrontation. If any of our wildlife and wilderness are to be preserved anywhere for future generations, it will be done only with the interest and consent of the city-dwelling majority of mankind.

So we believe zoos and aquarium are essential to the education of modern man, although their educational methods and the lessons they teach are different from those of the classroom. The most important lesson that they now have to teach is that the status of wild creatures is an indicator of the quality and flexibility of man's environment and of the ability of the environment to support continued life. Most immediately, zoos and aquariums must concentrate their efforts upon teaching the lesson that wild animals constitute a resource that is destroyed irrevocably when the last specimen of a species dies.

The best learned lessons, however, are those disguised in enjoyment, and a trip to one of these institutions is fun, first of all. More than 80 million visits were recorded by American zoos and aquariums last year—more than the combined attendance of all national football and baseball games. This total can be expected to climb steadily as the amount of leisure time increases. Thus zoos and aquariums reach a significant portion of the population.

In recent years more and more zoos have begun to show their animals in "natural habitat" exhibits, rather than confined in visually sterile cages. Moats are replacing bars; and new materials are making it possible to fabricate nearly indestructible exhibit settings even in areas of modest size. In line with these new opportunities and because of growing attendance, much new construction has been undertaken at the Bronx Zoo and the New York Aquarium as in similar institutions around the world. Because of the specialized requirements for housing animals, costs are far higher than in comparably sized buildings of other kinds.

In yet another way the zoos' habitat approach to exhibition is important. It must aid in providing relief to our crowded wildlife preserves and parks. Each year larger crowds tramp these fragile environments bare in search of the vanishing wilderness and a fleeting glance of its diminishing wild animals. Zoos must try harder to capture wilderness esthetic values and offer them closer to home.

The potential of zoos as a refuge for species near extinction was set forth in a recent review at the Bronx Zoo. Records of 162 species of birds which have become extinct in the past 400 years were examined. Of these, 71 forms had characteristics suggesting that they could have been propagated in captivity. With modern methods, the dodo, passenger pigeon, elephant bird, and Carolina parakeet might have survived. Some, at least, might now be reintroduced to protected parks in their native lands. As man spreads like a cancer over the once wild places of the earth, it is clear that an increasing number of species will find their last refugees in captivity. Already the great ungainly Pere David deer which once roamed the plains of Northeastern China; the Przewalski Horse, last of the true wild horses, from Mongolia and Sinkiang; and the wisent, or European bison, are dependant upon captive management.

Zoos and aquariums also are uniquely suitable for certain research studies into diseases of men and animals. However, not enough use is made of the research potential in live wild-animal collections. The New York and Philadelphia zoos are the only American zoos with a long record of scientific inquiry. One problem is the size of zoo animal collections: often the collection is too small to set up a statistically valid sample. Another problem is budgetary: few zoos can afford to hire purely scientific personnel, biologists who will not have to consider animal maintenance and exhibition among their primary duties.

At any rate, the threefold concept of an animal institution's functions is neither new nor a daring departure. The New York Zoological Society's 1895 Charter describes the group's purpose in these words:

(1) ". . . the instruction and recreation of the people,"

(2) ". . . the protection of wild animal life," and

(3) ". . . zoological research and publication."

In the pages that follow, the Society will report on how it pursued these objectives during 1968.

William G. Conway

WILLIAM G. CONWAY
December 1968

A VISIT TO THE CHILDREN'S ZOO

"FOR THE INSTRUCTION AND RECREATION OF THE PEOPLE"

THE BRONX ZOO

The major physical improvement over the year was the opening of a Big Bears complex in October. It consists of two sections, one containing polar bears, the other Kodiak bears and red foxes, their natural neighbors. The Department of Exhibition and Graphic Arts, headed by Jerry M. Johnson, developed a striking palisade of artificial rock work that, with a natural spine of rock, divides the two sections of the complex.

Also during the year, basic construction was completed on the World of Darkness building, in preparation for opening in June, 1969. The $660,000, 13,000-square-foot building was designed to house 300 nocturnal mammals, birds, reptiles, amphibians, and even fish, for whom the day-night cycle will be reversed. The cages are dimly lighted and the animals active during visiting hours, while at night, bright lights go on and the animals sleep. Visitors will learn firsthand the habits of a variety of animals active primarily between sundown and sun-up.

A new exhibit built around six rare West African white-necked picathartes was created at the Aquatic Birds Building. It includes sheer "rock" cliffs molded of fiber glass, a waterfall, and plantings of real ferns and vines. The Pheasant Aviary exhibits were renovated, allowing for fewer but larger enclosures with new decorative pools and plantings, a heating system, and new holding cages. The renovated display features a series of simulated habitats ranging from high conifer forest to open, grassy glades.

Plans were finally completed for the new World of Birds, featuring a great variety of habitat displays ranging through five halls, with bold use of graphic techniques and back-projection. Space is allowed for a room to show educational films to small groups and a gallery for exhibits of "bird art." Planning was also continued on a modernization of the Great Apes House.

AT LEFT AN INTRODUCTION
TO THE ANIMAL WORLD

A new dry stream bed exhibit was created at the Primate House, and renovation continued on the Birds of Prey exhibit and the Reptile House. In the lobby of the Reptile House, a large tile mural, designed and executed by the graphics department, was put up showing the variety and richness of reptile and amphibian life.

The Reptile House plans call for replacing the existing lobby and parts of the center island with four large habitat displays showing cold-blooded creatures of the rain forest, desert, river bank, and temperate ponds, and a new air-conditioned amphibian section. Another educational innovation—a loudspeaker system for reproducing background noises of the wild—also will be installed, along with full-spectrum fluorescent lights in the quarantine and holding rooms to improve health conditions.

Development of the non-exhibit holding area in the old Lion House basement also continued with the installation of 10 large, heavy-duty cages and construction of several additional smaller cages.

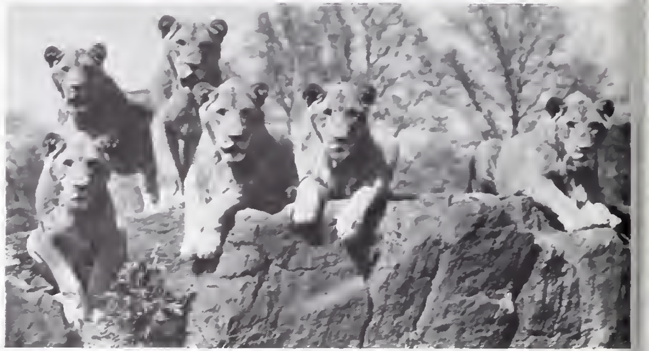
The development of a new master plan for the entire Zoological Park was initiated.

During the year, the Children's Zoo reported the highest attendance in sixteen years: 352,221 people went through the turnstiles. Meanwhile, at the adjacent Riding Track, a new camel and four additional ponies helped carry 235,477 junior Hopalongs and Beau Gestes.

Zoo visitors consumed three-quarters of a million dollars in food and drink at restaurants operated by the Facilities Department. Zoo restaurants served up a total of 1,628,000 soft drinks, 632,000 hot dogs, 424,000 bags of popcorn, and 422,000 bars of ice cream.

The Collection

If we compare the zoo to a more formal educational institution, the buildings, exhibits, and



TOP AND AT RIGHT: POLAR BEARS
(PAUL G. KOVAC)

MIDDLE: CUBS ON LION ISLAND

the tree-shaded grassy grounds would resemble the campus; and the personnel could be the faculty. The animals provide the lessons, but actually no formal program conceived by the mind of man can provide so unique an educational experience as can be gained by thoughtful observation of a living animal. It is from this that all of us can learn more about the world we live in, and ultimately about man himself.

Like new and important books added to the library, there were important animal additions during the year. In the Department of Mammalogy, headed by Curator Hugh B. House, the major acquisitions were three young Masai giraffes and a second female takin, "Daw Miri." The Bronx Zoo now has three takins—large Asian goat-antelopes. They are the only specimens in the Western World. Other acquisitions included three forms new to the collection: the dwarf mongoose, *Helogale parvula* Sundevall; the flat-headed cat, *Felis planiceps* Vigors and Horsfield, and the dik-dik (form of antelope), *Madoqua kirki* Gunther.

In addition, 162 mammals of 54 species, 209 birds of 40 species, and an assortment of reptiles, amphibians, and fish were successfully bred at the zoo and aquarium. Details are in another part of this report.

Some deaths also reduced the mammal population. Noteworthy were "Muyoni," a female okapi, who died after 13 years in the zoo, and a male gibbon who sired 12 offspring during his 26 years there. His mate, two sons, and a foster daughter are still at the zoo.

The bird collection acquired 29 new species; a number of pairs of rare pheasants like the Mikado pheasant, Hume's bar-tailed pheasant, and Temminck's tragopan; bustards, trumpeters, seriemas, and psittacines, three young double-wattled cassowaries, and five emus. A serious loss was that of an imperial pheasant which had been in the collection 21 years.

TOP: HEILPRIN'S TREE FROG

AT LEFT: FALCONER ERNST C. F. JOCHER AND A YOUNG MEMBER WITH A BLACK (HOODED) VULTURE

Ernst C. F. Jocher, internationally-known falconer, brought a group of birds to the zoo from Ireland for a series of demonstrations on the hunting techniques of the birds of prey. The Department of Ornithology helped Mr. Jocher care for and house his charges during their stay in New York. The Department of Publications and Public Relations prepared a pamphlet on birds of prey for distribution to the large number of visitors who turned out for the demonstration.

Two New Guinea taipans—relatives of the cobra—were added to the reptile collecting during the year, the only specimens now in the United States. A Borneo earless monitor lizard also was obtained, courtesy of the Sarawak Museum in Malaysia. Curator of Herpetology F. Wayne King collected a number of tatooed frogs, Hose's frogs, Blyth's frogs, Iban frogs, climbing toads, and red flying frogs on a trip to Southeast Asia.

Guarding Animal Health

As in the past, many of man's ailments bedeviled the animals during the year under discussion. In the Animal Hospital, directed by Charles P. Gandal, D.V.M., use of sophisticated equipment such as a 12-channel autoanalyzer and other extensive blood chemistry facilities, advanced bacteriology techniques, and intensive blood pathology examinations contributed to their survival. John M. Budinger, M.D., consultant in pathology, examined 421 specimens during the year.

The Hong Kong flu epidemic necessitated some extra precautions and these were successful in preventing an outbreak among the great apes, which are most susceptible. A group of *Calomys* and *Zygodontomys* mice donated to the zoo showed signs of transmissible malignant tumors and the entire group was euthanized, rather than risk the spread of such disease.

"Koga," the young male lowland gorilla, died during the year of ulcerative typhlitis which may have had its origin in lack of behavioral adaptation; "Fran," a female orangutan, developed septicemia following birth of a baby (found dead in her enclosure), but the septicemia responded well to broad-spectrum antibiotics. Obstetrical problems were faced, and overcome, with blesbok and gemsbok (antelopes), reindeer, mouse deer, snow leopard, and leopard cat.

Following are censuses of mammals, birds, and amphibians and reptiles as of December 31, 1968:

CENSUS OF MAMMALS

Orders	Families	Species and Subspecies	Specimens
MARSUPIALIA			
kangaroos, phalangers, opossums, etc.	3	8	13
INSECTIVORA			
moles, shrews, hedgehogs, etc.	2	2	10
CHIROPTERA			
bats	4	12	87
PRIMATES			
apes, monkeys, lemurs, marmosets, etc.	6	34	133
EDENTATA			
armadillos, sloths, anteaters	3	4	9
LAGOMORPHA			
pikas, rabbits, hares	1	1	2
RODENTIA			
squirrels, beavers, mice, porcupines, etc.	13	30	91
CARNIVORA			
bears, raccoons, cats, dogs, otters, etc.	7	62	167
PINNIPEDIA			
seals, sea lions, walruses	2	3	8
TUBULIDENTATA			
aardvarks	1	1	1
PROBOSCIDEA			
elephants	1	3	4
HYRACOIDEA			
hyrax	1	1	1
PERISSODACTYLA			
horses, tapirs, rhinoceroses	2	4	12
ARTIODACTYLA			
cattle, sheep, antelopes, camels, giraffes, deer, swine, hippopotamuses	7	43	342
TOTALS	53	208	880

Summary: orders, 14; families, 53; species and subspecies, 208; specimens, 880

CENSUS OF BIRDS

Orders	Families	Species and Subspecies	Specimens
SPHENISCIFORMES			
penguins	1	8	54
STRUTHIONIFORMES			
ostriches	1	2	4
RHEIFORMES			
rheas	1	2	19
CASUARIIFORMES			
cassowaries and emus	2	3	11
TINAMIFORMES			
tinamous	1	4	23
PODICIPEDIFORMES			
grebes	1	2	6
PELECANIFORMES			
pelicans, cormorants, etc.	3	8	26
CICONIIFORMES			
herons, ibises, storks, etc.	5	25	104
PHOENICOPTERIFORMES			
flamingoes	1	6	49
ANSERIFORMES			
swans, ducks, geese and screamers	2	99	511
FALCONIFORMES			
vultures, hawks and eagles	3	16	27
GALLIFORMES			
quail, pheasants, etc.	4	18	91
GRUIFORMES			
hemipodes, cranes, trumpeters, etc.	6	26	92
CHARADRIIFORMES			
plovers, sandpipers, gulls, etc.	10	50	271
COLUMBIFORMES			
pigeons, doves and sandgrouse	1	18	37
PSITTACIFORMES			
parrots, etc.	1	19	73

TOP: CATTLE EGRET AND WHITE RHINOCEROS (PAUL G. KOVAC)

AT RIGHT: RIDING TRACK

CUCULIFORMES			
touracos and cuckoos	1	6	8
STRIGIFORMES			
owls	2	18	40
CAPRIMULGIFORMES			
frogmouths, nighthawks, etc...	3	3	4
APODIFORMES			
hummingbirds	1	5	5
COLIFORMES			
colies	1	1	5
TROGONIFORMES			
trogons, quetzals	1	4	5
CORACIIFORMES			
kingfishers, hornbills, etc. ...	5	15	34
PICIFORMES			
barbets, toucans and woodpeckers	3	15	25
PASSERIFORMES			
perching birds	27	167	563
TOTALS	87	540	2,091

Summary: orders, 25; families, 87; species and subspecies, 540; specimens, 2,091.

CENSUS OF AMPHIBIANS AND REPTILES

Orders	Species and Subspecies	Specimens
AMPHIBIA		
CAUDATA		
salamanders	9	29
SALIENTIA		
frogs and toads	34	162
REPTILIA		
CHELONIA		
turtles	50	114
CROCODYLIA		
alligators and crocodiles	20	52
SQUAMATA		
SAURIA		
lizards	50	131
SERPENTES		
snakes	102	221

Summary: orders, 5; species and subspecies, 265; specimens, 709.

TOP: WHITE-QUILLED BLACK BUSTARD, PHEASANT AVIARY

AT LEFT: GALAGO

THE NEW YORK AQUARIUM

If numbers of visitors can be equated with education, the aquarium did well during the year in spreading the message.

Some 504,373 people visited the aquarium during the year—a 30% increase over 1967 totals and the largest number since its relocation from Manhattan's Battery to Coney Island.

However, its star attraction did not live out the year. "Lupa," a 16-foot, 5,200 pound female killer whale, whose acrobatics, feeding, and tooth-brushing routines delighted the crowds, succumbed to pneumonia shortly after Labor Day.

Several spawnings also took place in the aquarium tanks, including hogfish, tomato clownfish, and seahorses. The marine bird collection was enhanced by six cormorants from the Isle of Shoals, New Hampshire, obtained through efforts of Cornell University zoologists. In addition, the first hatching of a blackfoot penguin occurred at the aquarium in early spring.

On October 23, 1968, the aquarium presented to the City Planning Commission a capital budget request for 1969-1970 for plans and specifications for the construction of a Whale-Dolphin Research Building, a Northern Sea-World Building, and the redevelopment of the site into a dunes-like park atmosphere. Also outlined was the following additional long-term program for further development and subsequent consideration by the Board of Trustees: Administration-Auditorium complex and Tropical Freshwater Fish Exhibit (Exoterium); Restaurant, Walrus Exhibit, and additional parking facilities; Freshwater Game Fish Exhibit and alteration and addition to existing buildings; Polar Bay Exhibit and extended site development.

A training program for Explorer Scouts was introduced during the year. Groups of five to eight scouts attended lectures and movies and

TOP: "LUPA," THE KILLER WHALE

AT RIGHT: PENGUINS AT THE NEW YORK AQUARIUM

TOP: GREEN SEA TURTLE

MIDDLE: CARP

AT LEFT. TARPON

worked with tankmen to learn aquarium management. The scouts received experience in care, feeding, record keeping, and collecting.

Following is the census of marine fauna in the aquarium as of December 31, 1968:

CENSUS OF THE AQUARIUM

Orders	Species and Subspecies	Specimens
Phylum: CHORDATA		
Class: CHONDRICHTHYES sharks, rays, and chimeras		
SQUALIFORMES		
sharks	5	13
RAJIFORMES		
rays, skates	3	6
Class: OSTEICHTHYES bony fishes		
DIPTERIFORMES		
lungfishes	2	2
ACIPENSERIFORMES		
sturgeon	1	1
LEPISOSTEIFORMES		
gars	1	1
CLUPEIFORMES		
tarpon, bonefish	2	6
CYPRINIFORMES		
catfishes	3	42
ANGUILLIFORMES		
eels, morays	3	7
GASTEROSTEIFORMES		
sticklebacks, pipefishes, sea horses	3	22
CYPRINODONTIFORMES		
killies, cavefishes	3	160
BERYCIFORMES		
squirrelfishes, soldierfish	4	20
PERCIFORMES		
perch-like fishes	124	765
PLEURONECTIFORMES		
flatfishes	5	15
TETRAODONTIFORMES		
trunkfishes, triggerfish, puffers, cowfish	4	7
BATRACHOIDIFORMES		
toadfishes	1	13
Class: REPTILIA—reptiles		
TESTUDINES		
turtles	4	7
Class: AVES—birds		
SPHENISCIFORMES		
penguins	2	14
PELICANIFORMES		
cormorants	1	6
Class: MAMMALIA—mammals		
PINNIPEDIA		
seals, sea lions	6	16
CETACEA		
whales	1	4
Phylum: PORIFERA		
Class: DEMOSPONGIAE		
siliceous, horny sponges	2	30
Phylum: COELENTERATA		
Class: ANTHOZOA		
anemones, corals	9	1,341
Phylum: ANNELIDA		
Class: POLYCHAETA		
marine worms	2	4
Phylum: ARTHROPODA		
Class: CRUSTACEA		
lobsters, shrimps, crabs	14	312
Class: ARACHNIDA		
horseshoe crabs	1	2
Phylum: MOLLUSCA		
Class: GASTEROPODA		
snails	2	3
Class: PELECYPODA		
oysters, clams	2	237
Class: CEPHALOPODA		
octopus, squid	1	2
Phylum: ECHINODERMATA		
Class: ASTEROIDEA		
starfishes	9	59
Class: ECHINOIDEA		
sea urchins	2	90
Class: HOLOTHUROIDEA		
sea cucumbers	2	10
TOTALS	224	3,217

Summary: species and subspecies, 224, specimens, 3,217.

THE MEMBERSHIP

Membership rose once again during 1968. A total of 1,120 new members enrolled—offsetting losses due to death and resignations and raising the total membership at year's end to 7,162. Membership income also rose during 1968 to a high of $140,899.

There were five special events for members in the zoo and aquarium, including an autumn garden party to open the Big Bears complex, a treasure hunt, and two early morning Breakfast-in-the-Zoo programs.

The annual meeting was held at the Hotel Waldorf Astoria. Three sessions were held in the hotel to accommodate all members who wished to be present.

A summary of the membership as of December 31, 1968, follows:

SUMMARY OF MEMBERSHIP
December 31, 1968

Benefactors	33
Founder-in-Perpetuity	17
Founders	20
Associate Founders	26
Patrons	66
Life Members	346
Supporting Members	271
Contributing Members	2,182
Annual Members	4,119
Fellows	71
Research Associates	3
Corresponding Members	3
Honorary Members	5
TOTAL	7,162

SHARING THE WEALTH OF KNOWLEDGE

The society's program of educational publications and films expanded during the year, with particular effort aimed at improving *Animal Kingdom* and enlarging its circulation, and the completion of the new *Bronx Zoo Book of Wild Animals.*

Animal Kingdom began appearing, last August, with front and back covers in dramatic full color. Simultaneously, a campaign was mounted to sell the magazine in bulk to other zoos and aquariums around the country. Letters from Mr. Conway went to several institutions; promotional pamphlets were prepared and distributed, and Edward R. Ricciuti, Curator of Publications and Public Relations, made personal calls at several institutions.

The Seattle Zoological Society and Milwaukee Zoo now take 400 and 200 copies, respectively, per issue. At the beginning of the year, 10,900 copies of Animal Kingdom were printed; at year's end, the press run was 12,000.

The new guide book, *The Bronx Zoo Book of Wild Animals,* was published in September. Nearly 2,000 copies were sold in the first two weeks. Author of the 312-page volume is William Bridges, Curator of Publications Emeritus.

Under the guidance of Prof. John C. Stewart of Brooklyn College's Geology Department, Photo Librarian Dorothy Reville produced an eight-page, fold-out brochure, "An Introduction to the Geology of the Bronx Zoo and a Self-guided Geology Tour." She also designed and provided markers for the tour route and prepared a special rocks-and-minerals exhibit.

Efforts to promote the society's education objectives through general news and feature media also were successful, with generally good coverage on the falconry demonstration, big bears exhibit, killer whale, and an article by Mr. Conway, "The Consumption of Wildlife by Man," in *Animal Kingdom*. The article has been reprinted in several major publications. Several staff members were interviewed on radio and television, and articles long and short relating to the zoo appeared in *Sports Illustrated, The New Yorker, Science World, Science Digest, The New York Sunday News,* and many other publications.

Two motion pictures, one on seahorses and the other on general zoo and aquarium activi-

TOP: MEMBERS' GARDEN PARTY, 1968

AT RIGHT: EDUCATION DEPARTMENT INTRODUCES A YOUNG STUDENT TO A SPECTACLED OWL

ties, were made for the annual meeting.

Classes of school children and similar organized groups visited the zoo and aquarium in slightly reduced numbers during the year. The 10-week New York City teachers' strike in the fall affected attendance, since the numbers of classes and groups during May and June followed the more familiar pattern of continuous record-breaking attendance: 112,457 individuals in May compared with 110,651 the previous May, for example.

But over the year, class and group visits brought a total of just 380,323 to the zoo and aquarium as against 417,388 visitors in 1967. Of these, 302,832 went to the zoo and 77,400 to the aquarium in 1968; and 338,088 and 79,300 in 1967.

Zoology instructors visited 90 schools during the year, showing small animals and giving a natural history lecture to a total of 29,000 students in 135 different gatherings. In addition, members of the department gave 34 special lectures to other groups with a total audience of 8,516. More than 31,000 persons viewed society films either at the zoo and aquarium, or through loans and rentals.

The Education Department also gave special natural history programs in the zoo auditorium during the New York City teachers' strike to students of all grades. Stations WCBS-TV and WPIX called these to the attention of the whole metropolitan area, giving electronic impetus to the zoo's effort to assist the city's troubled educational establishment.

As another part of its educational mission, the society, aided by various foundations, colleges, and government agencies, provides relevant summer jobs for students heading toward careers in the natural sciences. In summer, 1968, about 20 students, representing nearly as many colleges, had such jobs.

AT LEFT: KODIAK BEARS (PAUL G. KOVAC)

"FOR THE PROTECTION OF WILD ANIMAL LIFE"

The society's charter assigns it the duties of guardian as well as teacher. During 1968, this led it to the defense of many threatened species, from Peve David deer to whales.

Breeding programs maintained by the zoo and aquarium, both among their own collections and through loan arrangements with other zoos, are important in the maintenance of some endangered species but more significant in developing techniques of husbandry which may aid vanishing species in the future. Pairs of large Malayan mouse deer from the zoo's prolific herd went to Milwaukee, San Diego, Dallas, and Houston to establish other breeding groups there; previously pairs had been sent to Buffalo, Philadelphia, and Washington, D.C. The zoo's bachelor anoa and Congo buffalo were sent to the San Diego Zoo, where there are others of their species, also with the object of increasing the total number of their kind.

Once again, a female snow leopard from the Oklahoma City Zoo was successfully bred to the Bronx Zoo's male. She produced two female cubs. Altogether, 162 mammals of 54 species were successfully bred in the zoo. Among them were a Grevy zebra, a pygmy hippopotamus, and Siberian ibex (goat). In the deer family, 15 more large Malayan mouse deer were bred, as well as 6 Reeves muntjacs, a red brocket, 5 Formosan sika deer, and a Pere David deer. In the primate group were 2 ring-tailed lemurs, a Demidoff galago, 8 white-faced marmosets, a Japanese macaque, a Barbary ape, 2 talapoins, 3 wanderoos, and 2 mandrills. Five nyala and a black-backed duiker, varieties of African antelope, also were born at the zoo during the year, as well as 2 white-tailed gnus and a wisent, or European bison.

The Department of Herpetology scored a significant breeding accomplishment: it succeeded in hatching 21 reticulated pythons from a clutch of 51 eggs laid some months earlier.

AT LEFT: SIBERIAN IBEX

Nineteen survived infancy. This marked the first time that this species has been successfully bred and hatched in captivity in this country. Five salamanders, Hose's frogs, and barking tree frogs also were bred successfully during the year.

A small female Chinese alligator was borrowed from the Black Hills Reptile Gardens, South Dakota, for inclusion in the department's effort to breed this endangered species; and West Indian iguanas and rhinocerous iguanas were acquired for stocking a new breeding enclosure in the reptile greenhouse.

Some 209 birds of 40 species resulted from the Department of Ornithology's breeding program; one, the Argentine ruddy duck, *Oxyura vittata*, is believed to be the first of its species reared in captivity. Some 22 greater rheas and 18 Darwin's rheas were the first of this group to be reared at the zoo. Also producing young for the first time were Australian radjah shelduck, Hawaiian duck, American ruddy duck, and ruff, or fighting snipe.

TOP: SCARLET IBIS WITH YOUNG

MIDDLE: REEVES MUNTJAC (PAUL G. KOVAC)

AT RIGHT: GREVY ZEBRAS

Scarlet ibises nested again in the riverbank display of the Aquatic Birds Building and raised two chicks, while the boat-billed heron colony in the treetops exhibit nearby produced nine young. The season's greatest disappointment was the tufted puffins' failure to reproduce; after more than 30 days of brooding, one egg was found in the exhibit pool. It contained a fully developed, dead embryo.

The bird breeding program has given the zoo more birds of 12 species than it needs. The surplus includes rheas, tinamous, herons, waterfowl, gulls, stilts, and plovers. During the past year, specimens were sent to 11 American zoos and three in Europe.

Many field trips also were undertaken for research and to study threatened species :

- F. Wayne King, Curator of Herpetology, participated with Florida officials in sponsoring a cooperative effort between various conservation organizations and state and federal wildlife agencies to work out new methods for protection of the American alligator.

  Dr. King also traveled to Komodo Island in Indonesia, home of the giant Komodo monitor lizards. He surveyed the island to determine the feasibility of conducting a year-long study of the monitors.
- A cooperative effort was undertaken with French authorities to establish a system of nature reserves in Ivory Coast, Cameroon, and Gabon in West Africa. Both the forests and their fauna are in grave danger of total extermination.
- Dr. George Schaller, of the Institute for Research in Animal Behavior, continued his studies of the behavior, including prey selection, and ecology of African Lions in Tanzania and Indian lions in India, and the reproductive behavior of Kashmir stags, which are in danger of being hunted into extinction.
- Mr. Conway and Joseph Bell, Associate Curator of Ornithology, went to Trinidad to collect oilbirds and conduct research on their habits.

The Society has long worked for legislation to protect threatened species. It opposes unregulated trade in skins and hides of animals which may lead to their extinction. It supports controls on the types of animals to be sold as household pets, and also supports measures that would set standards for trapping and shipment of wild species.

Another important contribution during the year was publication and distribution of a written appeal for steps to protect whales. "Among Wild Whales," by Dr. Roger Payne, of the Institute for Research in Animal Behavior, was distributed to members and prospective members. More than 2,000 members returned a postcard casting ballots for the position that "something should be done." More than 700 prospective members also mailed in cards, and about 400 were moved to enroll as new members.

TOP: SNOW LEOPARD

AT LEFT: KOMODO MONITOR (HILMI OESMAN)

“FOR ZOOLOGICAL RESEARCH AND PUBLICATION”

Alone, and in conjunction with other institutions, the society sponsored during the year important contributions to man’s knowledge of animals and their effect on his life.

The New York Aquarium has always sought new techniques of using fish as experimental animals in biomedical research. Through its Osborn Laboratories of Marine Sciences, Director Ross F. Nigrelli announced a highly significant biological discovery: the common bullhead catfish can produce the kinds of antibodies which give serologists the reactions needed to type human blood. From this discovery, it is believed a fuller understanding of human blood chemistry may develop.

Other studies under way at the Osborn Laboratories include:

- Under Dr. Jack T. Cecil, development of new methods for culturing cells from the organs of marine invertebrates. Artificially-grown cells from the heart of the surf clam are being used for studies on propagation of viruses.
- Under Dr. Martin F. Stempien, Jr., the isolation, purifying, and identification of antibiotic substances in certain sponges. This is one of several studies seeking pharmacologically active substances in marine organisms being supported by a grant from the John A. Hartford Foundation, Inc.

Members of the laboratories were authors of, or contributed to, 17 papers published in scientific journals or presented as lectures before scientific gatherings on the above and other subjects.

Dr. Ross F. Nigrelli, Director of the Osborn Laboratories of Marine Sciences, took part in meetings of the National Council of Marine Resources and Engineering Development in Washington, D.C. The conferees discussed hazards to fish life caused by rotting pilings and

AT LEFT MIGRATORY WATERFOWL

barges and by floating refuse.

At the Institute for Research in Animal Behavior, supported jointly by the society and The Rockefeller University, a new laboratory installation was completed for research into the life rhythms of fiddler crabs and other aquatic animals. The installation, in the loft over I.R.A.B.'s work shop, has large tanks illuminated with artificial sun light and fronted with one-way glass. Timing of simulated tides, dawn, and dark are controlled on any desired schedule. At the year's end the first inhabitants, fiddlers from St. Thomas, Virgin Islands, and San Juan, Puerto Rico, had adapted to an environment totally alien to their own, waving their claws and fighting by West Indian time, while feeding on micro-organisms imported from Long Island.

The results of a 10-year study in song learning in white-crowned sparrows also were being prepared for publication at the end of the year. The study by Dr. Peter Marler revealed many parallels with speech learning in children, which proved interesting to psychologists studying the merchanisms of vocal learning.

Dr. Marler also presented a paper on the vocalizations of wild chimpanzees, based on an analysis of tape and film recordings of chimpanzee behavior. A color sound film of the vocalizations and associated behavior of the chimpanzees was completed for the society's 1969 annual meeting.

In other projects:

- Dr. Roger S. Payne participated with Scott McVay, of Princeton University, in an analysis of humpback whale-sound recordings made by Frank Watlington of Columbia University's Lamont Geophysical Observatory. They concluded that humpback whales may sing to each other as birds do, except that one song lasts for minutes rather than seconds.
- Steven Green is studying the social behavior of the Japanese macaque in the field in cooperation with a group of Japanese researchers from Kyoto University and Osaka University.
- Dr. and Mrs. Fernando Nottebohm, also of the Institute, began working on the natural history and social behavior of the orange-winged Amazon parrot, *Amazona amazonica*, in Trinidad. While there, Dr. and Mrs. Nottebohm hand-reared 12 baby Amazon parrots.
- In November, 1968, Dr. Richard Penney and Rockefeller University graduate Donald K. Riker went to Antarctica for experiments on the navigation of the South Polar skua and Adelie penguin.
- Dr. Hans-Ulrich Schnitzler of Tubingen University, Germany, conducted studies on bats and birds in the laboratory's wind tunnel.
- Dr. Thomas T. Struhsaker returned during the year from an 18-month intensive field study of forest-living primates of West Africa.

TOP: DR. ROSS F. NIGRELLI, OSBORN LABORATORIES OF MARINE SCIENCES

AT RIGHT: MALE MANDRILL

- Dr. Donald R. Griffin, Director of the Institute, and other members of the staff have begun a program of radar observation of night-migratory birds; it has been disclosed that many of them migrate under or even through dense cloudbanks, where supposedly-guiding stars are invisible.

The William Beebe Tropical Research Station, at Simla, Trinidad, administered by I.R.A.B., was the headquarters for two research groups, Indiana University and Amherst College respectively, investigating night vision in bats, and the ecological relationship between butterflies with pronounced mimicry and the milkweed-related food plants which nourish them as caterpillars.

The program at the Jackson Hole Biological Research Station in the summer of 1968 included seminars and talks by visiting scientists, participation in the Student Conservation Program, participation in two programs for high school biology students, and seven research investigations, assisted by federal, state, and university grants. Some examples are:

- A comparative study of interspecies communication, supported by the University of Colorado.
- Range survey in Teton County, supported by the Wyoming Natural Resources Board.
- Parasites of ungulates in the Jackson Hole area, supported by the New York Zoological Society.
- Ecology of the Uinta ground squirrel.

TOP: DR. RICHARD L. PENNEY
WITH NESTING COLONY OF
ADELIE PENGUINS AT I.R.A.B.

MIDDLE: CHIMPANZEES

AT LEFT: WAPITI (ELK),
JACKSON HOLE, WYOMING

FINANCIAL STATEMENTS

BALANCE SHEET December 31, 1968

Exhibit A

CURRENT FUNDS

General

Assets			Liabilities and Fund Balances		
Cash		$ 763,370.88	Accounts payable and accrued expenses		$ 329,324.38
Accounts receivable:			Due to current restricted funds		581,317.62
City of New York	$ 653,087.04		Due to unexpended land, buildings, animals and equipment funds		519,792.38
Other	112,908.86	765,995.90	Due to endowment funds and funds functioning as endowment		134,862.87
Inventories, at lower of cost or market		17,973.35	Fund balances:		
Prepaid expenses and deferred charges		20,363.10	Appropriations for special purposes (Exhibit C)		—
			Unappropriated (no change during year)		2,405.98
Total general		$1,567,703.23	Total general		$ 1,567,703.23

Restricted

Cash	12,500.00	Accounts payable and accrued expenses	14,814.26
Grants receivable—United States Government	183,826.05	Due to unexpended land, buildings, animals and equipment funds	676,325.43
Inventories—visitor facilities, at lower of cost or market	98,358.24	Fund balances (Exhibit D)	856,150.59
Other	14,430.83		
Due from current general fund	581,317.62		
Due from endowment funds and funds functioning as endowment	656,857.54		
Total restricted	$1,547,290.28	Total restricted	$ 1,547,290.28

LAND, BUILDINGS, ANIMALS AND EQUIPMENT FUNDS

Unexpended Funds

Investments (market value $92,779.00)—(note 2)	38,627.11	Accounts payable—City of New York	290,034.07
Bonds on deposit—City of New York (market value $206,550.75)	209,556.20	Fund balances (Exhibit E)	1,891,280.61
Due from current general fund	519,792.38		
Due from current restricted funds	676,325.43		
Due from endowment funds and funds functioning as endowment	737,013.56		
Total unexpended	$2,181,314.68	Total unexpended	$ 2,181,314.68

Equity in Land, Buildings, Animals and Equipment

Equipment—visitor facilities, at cost (note 3):		Investment in land, buildings, animals and equipment (Exhibit F)	$ 339,391.98
Zoological Park	$ 666,882.90		
Aquarium	53,732.58		
	720,615.48		
Less accumulated depreciation	381,228.50		
	339,386.98		
Other land, buildings, animals and equipment (note 3)	5.00		
Total investment	$ 339,391.98	Total investment	$ 339,391.98

ENDOWMENT FUNDS AND FUNDS FUNCTIONING AS ENDOWMENT

Investments (market value $14,988,353.84)—(note 2)	12,859,989.67	Due to current restricted funds		656,857.54
Note receivable	45,084.00	Due to unexpected land, buildings, animals and equipment funds		737,013.56
Due from current general fund	134,862.87	Principal of funds:		
		Endowment funds (Exhibit G)	$2,388,084.78	
		Funds functioning as endowment (Exhibit G)	9,257,980.66	
				11,646,065.44
Total endowment funds and funds functioning as endowment	$13,039,936.54	Total endowment funds and funds functioning as endowment		$13,039,936.54

See accompanying notes to financial statements.

SUMMARY OF FINANCIAL ACTIVITIES

Exhibit B

Year ended December 31, 1968

Revenue:			
Fees and grants from governmental units:			
Appropriations from the City of New York			$1,786,967.36
Other governmental			348,954.67
Total governmental fees and grants			2,135,922.03
Other:			
Membership dues		$ 140,899.00	
Program service fees and grants:			
Admissions		387,573.20	
Foundation and private grants		270,020.00	
Indirect costs recovered		60,995.52	
Other		21,003.53	
Income from visitor facilities (after deducting $1,281,705.00 of directly related costs and expenses):			
Zoological Park	$495,286.42		
Aquarium	117,956.46	613,242.88	
Investment income		646,569.38	
Miscellaneous revenue		21,503.70	
Total other			2,161,807.21
Support from the public—contributions:			
For current general purposes		971,797.84	
For current restricted purposes		168,845.75	
For acquisition of land, buildings, animals and equipment		100,168.34	
For endowment purposes		8,199.12	
Total public support			1,249,011.05
Total revenue and support			5,546,740.29
Deduct revenue and support limited by donors:			
Currently expendable, only as specified by agreement (Exhibit D)		3,089,289.63	
Construction and acquisition of land, buildings, animals and equipment (Exhibit E)		179,649.74	
Endowment purposes, with only income currently expendable (Exhibit G)		8,199.12	
Total limited support and revenue			3,277,138.49
Revenue and support available to finance current general expenditures, carried forward			$2,269,601.80

See accompanying notes to financial statements.

Expenditures:			
Program services:			
Educational animal exhibits:			
Zoological Park		$2,123,896.82	
Aquarium		539,733.48	
Separately budgeted research		605,035.57	
Conservation and other public services		162,215.30	
Public and professional education		167,647.94	
Total program services		3,598,529.11	
Total revenue and support to finance current general expenditures, brought forward			$2,269,601.80
Supporting services:			
Management and general	$ 351,403.36		
Fund raising	23,319.69		
Total supporting services		374,723.05	
Major expenditures for land, buildings, animals and equipment		874,952.95	
Total expenditures		4,848,205.11	
Expenditures financed by special funds:			
Special purpose funds (Exhibit C)	3,000.00		
Current restricted funds (Exhibit D)	2,368,336.51		
Unexpended land, buildings, animals and equipment funds (Exhibit E)	874,952.95		
Funds functioning as endowment (Exhibit G)	412,158.15	3,658,447.61	
Expenditures financed by current general revenue and support			1,189,757.50
Excess of current general revenue and support over related expenditures			1,079,844.30
Deduct:			
Transfer to unexpended land, buildings, animals and equipment funds (Exhibit E)		117,956.46	
Transfer to funds functioning as endowment (Exhibit G)		961,887.84	
			1,079,844.30
Net change in unappropriated current general fund			$ —

STATEMENT OF CHANGES IN CURRENT RESTRICTED FUND BALANCES

Exhibit D

Year ended December 31, 1968

	Balance at beginning of year	Add current revenue, expendable only as specified by agreement (Exhibit B)	Deduct: To finance expenditures included in Exhibit B	Deduct: Transfers	Deduct: Other	Balance at end of year
Educational animal exhibits:						
Zoological Park	$164,597.09	1,576,030.20	1,576,030.20	—	—	164,597.09
Aquarium	27,834.15	214,072.16	210,937.16	(5,240.00)	—	25,729.15
Total educational animal exhibits	192,431.24	1,790,102.36	1,786,967.36	(5,240.00)	—	190,326.24
Separately budgeted research:						
United States Government	88,947.11	348,954.67	201,479.28	—	49,288.51	187,133.99
Other	102,726.65	307,388.96	229,574.57	5,240.00	12, 891.76	172,889.28
Total separately budgeted research	191,673.76	656,343.63	431,053.85	5,240.00	62,180.27	360,023.27
Conservation and other public services	240,281.31	147,305.28	149,415.30	—	—	238,171.29
Public and professional education	8,277.85	251.94	900.00	—	—	7,629.79
Visitor facilities—Zoological Park	60,000.00	495,286.42	—	495,286.42	—	60,000.00
Total	$692,664.16	3,089,289.63	2,368,336.51	495,286.42(1)	62,180.27(2)	856,150.59

Notes:

(1) Represents amounts transferred to unexpended land, buildings, animals and equipment funds (Exhibit E).

(2) Includes indirect costs recovered on research grants of $60,995.52 (Exhibit B).

See accompanying notes to financial statements.

STATEMENT OF CHANGES IN UNEXPENDED LAND, BUILDINGS, ANIMALS AND EQUIPMENT FUNDS

Exhibit E

Year ended December 31, 1968

	Zoological Park animal acquisitions and improvements—financed by:		Aquarium animal acquisitions and improvements—financed by:		
	Net income from visitor facilities and admissions	Contributions, appropriations and other sources	Net income from visitor facilities	Contributions, appropriations and other sources	Total
Balance at beginning of year	$ 561,138.73	1,194,449.56	—	118,877.65	1,874,465.94
Adjustment of beginning balance	18,320.23	(18,336.51)	—	16.28	—
Balance at beginning of year, as adjusted	$ 579,458.96	1,176,113.05	—	118,893.93	1,874,465.94
Revenue:					
Contributions	—	100,168,34	—	—	100,168.34
Admissions	64,926.25	—	—	—	64,926.25
Investment income	—	12,156.15	—	—	12,156.15
Sale of animals	964.00	—	—	—	964.00
Miscellaneous	—	1,435.00	—	—	1,435.00
Total revenue	65,890.25	113,759.49	—	—	179,649.74
Appropriations from other funds:					
Current general fund (Exhibit B)		—	117,956.46	—	117,956.46
Appropriations for special purposes (Exhibit C)	—	—	—	1,875.00	1,875.00
Current restricted funds (Exhibit D)	495,286.42	—	—	—	495,286.42
Funds functioning as endowment (Exhibit G)	—	75,000.00	—	22,000.00	97,000.00
Total appropriations	495,286.42	75,000.00	117,956.46	23.875.00	712,117.88
Total revenue and appropriations	$ 561,176.67	188,759.49	117,956.46	23,875.00	891,767.62
Total balance, revenue and appropriations	1,140,635.63	1,364,872.54	117,956.46	142,768.93	2,766,233.56
Deduct amounts expended for land, buildings, animals and equipment	690,781.25	120,625.39	19,679.35	43,866.96	874,952.95
Balance at end of year	$ 449,854.38	1,244,247.15	98,277.11	98,901.97	1,891,280.61

See accompanying notes to financial statements.

Exhibit C

STATEMENT OF CHANGES IN APPROPRIATIONS FOR SPECIAL PURPOSES

Year ended December 31, 1968

Balance at beginning of year		$2,311.32
Appropriations from funds functioning as endowment (Exhibit G)		2,563.68
		4,875.00
Deductions:		
To finance expenditures included in Exhibit B	$3,000.00	
Transferred to unexpended land, buildings, animals and equipment funds (Exhibit E)	1,875.00	
Total deductions		4,875.00
Balance at end of year		$ —

Exhibit F

STATEMENT OF CHANGES IN INVESTMENT IN LAND, BUILDINGS, ANIMALS AND EQUIPMENT

Year ended December 31, 1968

Balance at beginning of year		$378,449.59
Add purchase of equipment		4,517.25
		382,965.84
Deductions:		
Current year's provision for depreciation	$35,973.86	
Other	7,600.00	
Total deductions		43,573.86
Balance at end of year		$399,391.98

See accompanying notes to financial statements.

Exhibit

STATEMENT OF CHANGES IN ENDOWMENT FUNDS AND FUNDS FUNCTIONING AS ENDOWMENT

Year ended December 31, 1968

Endowment Funds

	Balance at beginning of year	Endowment gifts and bequests (Exhibit B)	Loss on disposal of investments	Balance at end of yea
Income unrestricted:				
George F. Baker fund	$ 176,665.74	—	27.72	176,638.0
Mary Thurston Cockroft fund	62,215.25	—	9.82	62,205.4
Robert Jaffray fund	22,506.47	—	3.51	22,502.9
William Pyle Philips fund	16,426.19	—	2.63	16,423.5
Rockefeller fund	1,631,907.26	—	255.94	1,631,651.3
Jacob H. Schiff fund	172,303.65	—	26.84	172,276.8
Total unrestricted	2,082,024.56	—	326.46	2,081,698.1
Income restricted:				
Research—Madison Grant scientific research fund	85,648.84	8,199.12	13.51	93,834.4
Conservation and other public services:				
Grant fund for the protection of wildlife	40,030.00	—	6.32	40,023.6
Stokes bird fund	8,250.59	—	1.23	8,249.3
Animal purchases:				
Edward P. Casey fund	132,048.85	—	20.70	132,028.1
Cadwalader animal fund	32,256.13	—	5.09	32,251.0
Total restricted	298,234.41	8,199.12	46.85	306,386.6
Total endowment funds	$2,380,258.97	8,199.12	373.31	2,388,084.7

Funds Functioning as Endowment

Balance at beginning of year		$8,809,195.5
Add appropriations from current general fund (Exhibit B)		961,887.8
		9,771,083.3
Deductions:		
Transfers to:		
Current general fund (Exhibit B)	$412,158.15	
Appropriations for special purposes (Exhibit C)	2,563.68	
Unexpended land, buildings, animals and equipment funds (Exhibit E)	97,000.00	
	511,721.83	
Loss on disposal of investments	1,380.88	
Total deductions		513,102.7
Balance at end of year		$9,257,980.6

See accompanying notes to financial statements.

NOTES TO FINANCIAL STATEMENTS

December 31, 1968

(1) New York Zoological Society follows the practice of reporting on the use of resources by specific fund groups similar to the reporting practices of organizations in related fields. On the basis of these practices, no provision for depreciation has been made in operations.

Except for unrestricted pledges of approximately $340,000.00 and restricted pledges of approximately $880,000.00 which have not been recorded, the accompanying statements are prepared on the accrual basis.

Expenditures for land, buildings, animals and equipment have been charged to operations and to unexpended land, buildings, animals and equipment funds. However, only the equipment of the visitor facilities has been recorded as assets in the land, buildings, animals and equipment fund at cost. Other such assets are recorded in this fund at nominal value (see note 3).

(2) Investments are stated at cost or, if acquired by gift, at values established by the Society's management as representing fair market value at dates of acquisition.

(3) Equipment of the visitor facilities in use at December 31, 1968 is reflected at cost and is being written off over its estimated useful life on a straight-line basis. Other land, buildings, animals and equipment of the Society, including, but not limited to, the following, are recorded at the nominal value of $5.00:

National collection of heads and horns, art gallery, library and sundry items
Collection of living animals
Coney Island real estate
Land and buildings made available by the City of New York

(4) The New York Zoological Society and the City of New York have agreed to construct an aquarium, as funds become available, at an estimated total cost (to be shared equally) of $7,100,000.00, of which the initial stage (of approximately $1,550,000.00) was completed May 31, 1957.

(5) There are two pension plans covering substantially all of the Society's full-time employees. The total pension expense for 1968 was $41,393.50. The Society's policy is to fund pension cost accrued, and no unfunded past service cost or unfunded vested benefits existed at December 31, 1968. The assets of the pension fund, which approximated $3,000,000.00 at December 31, 1968, are not recorded in the accompanying financial statements.

PEAT, MARWICK, MITCHELL & CO.

ACCOUNTANT'S REPORT

The Board of Trustees
New York Zoological Society:

We have examined the balance sheet of New York Zoological Society as of December 31, 1968 and the related summary of financial activities and statements of changes in fund balances for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, except for the valuation of certain fixed assets and the omission of pledges receivable as described in note 1 to the financial statements, the accompanying financial statements present fairly the financial position of New York Zoological Society at December 31, 1968, the revenue, support from the public, expenditures and appropriations, and the changes in fund balances for the year then ended, in conformity with accounting practices followed by non-profit organizations in related fields.

Peat, Marwick, Mitchell & Co.

March 25, 1969

THE PENSION FUND

(founded by Andrew Carnegie)

STATEMENT OF CASH TRANSACTIONS

Year ended December 31, 1968

Balance at beginning of year:		
Investments (quoted market value $2,951,127.57)		$2,888,513.37
Uninvested balance of cash		38,746.29
		2,927,259.66
Receipts:		
Income from investments:		
Interest	$ 94,337.88	
Dividends	50,191.43	
	144,529.31	
Contributions by employees—regular	9,573.71	154,103.02
		3,081,362.68
Expenditures:		
Refunds on account of resignations	3,041.79	
Pension disbursements	85,545.30	
Death benefit disbursements	1,812.00	
Custodian fees	1,577.39	91,976.48
		2,989,386.20
Net gain on investment transactions		10,755.07

	Value			
	Quoted market	Cost		
Balance at end of year:				
Investments:				
Bonds	$1,862,150.63	2,179,361.99		
Preferred stocks	69,875.00	88,879.59		
Common stocks	1,250,489.38	695,684.72		
	$3,182,515.01		2,963,926.30	
Uninvested balance of cash			36,214.97	
				$3,000,141.27

PEAT, MARWICK, MITCHELL & CO.

The Board of Trustees
New York Zoological Society:

We have examined the statement of cash transactions of The Pension Fund (founded by Andrew Carnegie) of the New York Zoological Society for the year ended December 31, 1968 and the supporting schedule of investments as of December 31, 1968. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the accompanying statement of cash transactions for the year ended December 31, 1968, together with the aforementioned supporting schedule, presents fairly the results of recorded cash transactions of The Pension Fund of the New York Zoological Society for the year then ended and the assets of the Fund at December 31, 1968, on a basis consistent with that of the preceding year.

Peat, Marwick, Mitchell & Co.

March 7, 1969

PEAT, MARWICK, MITCHELL & CO.

The Board of Trustees
New York Zoological Society:

We have examined the statement of the Principal Fund of the Permanent Wild Life Protection Fund for the year ended December 31, 1968, set forth below:

Amount due from New York Zoological Society		$ 20,019.44
Investments, at cost (quoted market value $212,586.25)		212,401.85
Principal Fund:		
Balance at beginning of year	$228,432.58	
Add net gain on disposal of investments	3,988.71	
Balance at end of year		$232,421.29

Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In accordance with the agreement establishing this Fund, the income from the investments of $11,375.50 was paid over to the New York Zoological Society to be used for the specific purposes set forth in such agreement.

In our opinion, the above statement of Principal Fund presents fairly the financial position of the Permanent Wild Life Protection Fund at December 31, 1968, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

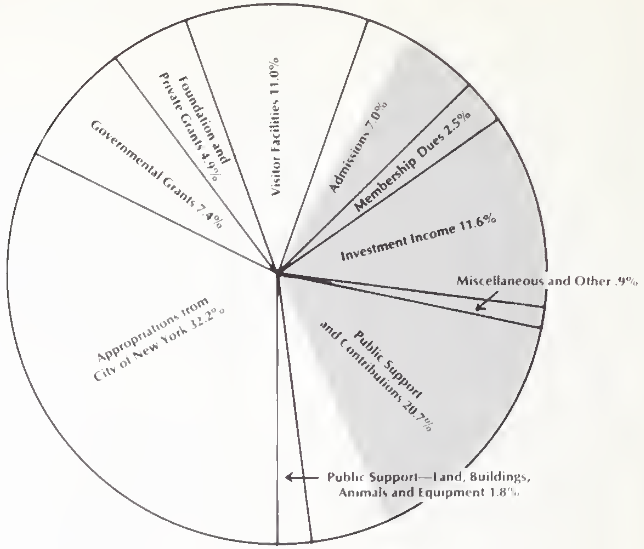
Peat, Marwick, Mitchell & Co.

March 3, 1969

NEW YORK ZOOLOGICAL SOCIETY

YEAR ENDED DECEMBER 31, 1968

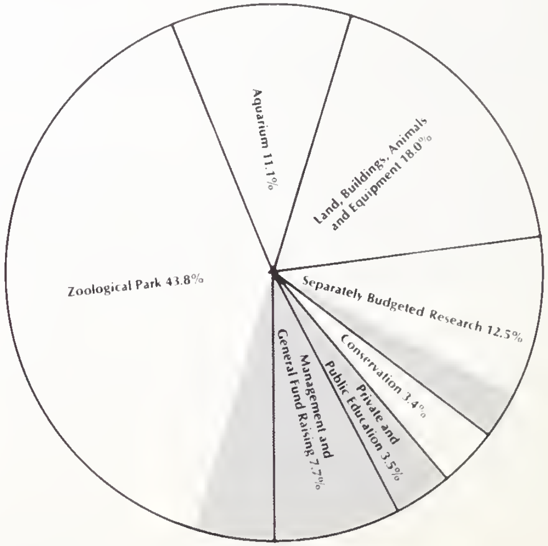
SUMMARY OF FINANCIAL ACTIVITIES



REVENUE AND SUPPORT $5,546,740.29

☐ Support and revenue limited by donor or agreement.

▨ Support and revenue available for support of current activities.



EXPENDITURES $4,848,205

☐ Expenditures financed by special funds including $412,158 from funds functioning as endowments for the support of operations.

▨ Expenditures financed by current support and revenue.

NEW YORK ZOOLOGICAL SOCIETY

Incorporation of the New York Zoological Society by the State of New York was accomplished under Chapter 435 of the Laws of 1895 and the basic purposes of the Society were embodied in Section 2:

> Said corporation shall have power to establish, maintain and control zoological parks, gardens, or other collections for the promotion of zoology and kindred subjects, and for the instruction and recreation of the people. Said corporation may collect, hold and expend funds for zoological research and publication, for the protection of wild animal life, and for kindred purposes, and may promote, form, and co-operate with other associations with similar purposes, and may purchase, sell, or exchange animals, plants, and specimens appropriate to the objects for which it was created.

Subsequently, at a special meeting of the Commissioners of the Sinking Fund, City of New York, held on March 24, 1897, a resolution was passed allotting South Bronx Park for the use of the New York Zoological Society and establishing the terms of a management agreement under which the Society has operated since that date, with only minor modifications.

The resolution of March 24, 1897, and the supplemental agreement of January 24, 1942, provided that the Society should furnish the original equipment of buildings and animals, that it should raise $250,000 by subscription within three years of the date of starting work on the improvement of the grounds, that the Society should have the right to establish an endowment fund to be used solely for the general uses and purposes of the Society unless otherwise specified by the donors, that the City of New York should provide funds for the maintenance and care of the Zoological Park and for the maintenance of the animal collections, that the Zoological Park should be open to the public free at least four days a week, that the Society may expend the net proceeds of facilities only for the purchase of animals and the improvement of the Zoological Park and that the Society should have the right to make and control all appointments of employees and to fix salaries and make promotions.

NEW YORK ZOOLOGICAL SOCIETY

Organized 1895

Presidents

I.	ANDREW H. GREEN	1895 to 1897
II.	LEVI P. MORTON	1897 to 1909
III.	HENRY FAIRFIELD OSBORN	1909 to 1925
IV.	MADISON GRANT	1925 to 1937
V.	W. REDMOND CROSS	1937 to 1940
VI.	FAIRFIELD OSBORN	1940

First Vice-Presidents

I.	J. HAMPTON ROBB	1895 to 1897
II.	HENRY FAIRFIELD OSBORN	1897 to 1909
III.	SAMUEL THORNE	1909 to 1916
IV.	MADISON GRANT	1916 to 1925
V.	FRANK K. STURGIS	1925 to 1932
VI.	W. REDMOND CROSS	1932 to 1937
VII.	KERMIT ROOSEVELT	1937 to 1939
VIII.	ALFRED ELY	1939 to 1959
IX.	LAURANCE S. ROCKEFELLER	1959

Second Vice-Presidents

I.	CHARLES E. WHITEHEAD	1895 to 1902
II.	JOHN L. CADWALADER	1902 to 1915
III.	MADISON GRANT	1915 to 1916
IV.	FRANK K. STURGIS	1916 to 1925
V.	HENRY D. WHITON	1925 to 1930
VI.	KERMIT ROOSEVELT	1930 to 1937
VII.	ALFRED ELY	1937 to 1939
VIII.	LAURANCE S. ROCKEFELLER	1939 to 1959
IX.	HENRY CLAY FRICK, II	1966
X.	ROBERT G. GOELET	1966

Honorary Vice-President

I.	DE FOREST GRANT	1957 to 1960

Treasurers

I.	L. V. F. RANDOLPH	1895 to 1901
II.	CHARLES T. BARNEY	1901 to 1903
III.	PERCY RIVINGTON PYNE	1903 to 1922
IV.	CORNELIUS R. AGNEW	1922 to 1953
V.	DAVID HUNTER McALPIN	1953 to 1968
VI.	JOHN PIERREPONT	1968

Secretaries

I.	MADISON GRANT	1895 to 1925
II.	WILLIAM WHITE NILES	1925 to 1935
III.	FAIRFIELD OSBORN	1935 to 1940
IV.	HAROLD J. O'CONNELL	1941 to 1959
V.	G. W. MERCK	1959 to 1964
VI.	JOHN ELLIOTT	1964 to 1968
VII.	HOWARD PHIPPS, JR.	1968

Chairmen, Executive Committee

I.	CHARLES E. WHITEHEAD	1895 to 1896
II.	HENRY FAIRFIELD OSBORN	1896 to 1903
III.	CHARLES T. BARNEY	1903 to 1907
IV.	HENRY FAIRFIELD OSBORN	1907 to 1909
V.	MADISON GRANT	1909 to 1937
VI.	W. REDMOND CROSS	1937 to 1940
VII.	LAURANCE S. ROCKEFELLER	1940 to 1943
VIII.	FAIRFIELD OSBORN	1943 to 1945
IX.	LAURANCE S. ROCKEFELLER	1945 to 1968
X.	ROBERT G. GOELET	1968

Directors

I.	WILLIAM T. HORNADAY	
	Zoological Park	1896 to 1926
II.	CHARLES H. TOWNSEND	
	New York Aquarium	1902 to 1937
III.	W. REID BLAIR	
	Zoological Park	1926 to 1940
IV.	ALLYN R. JENNINGS	
	Zoological Park	1940 to 1941
V.	CHARLES M. BREDER, JR.	
	New York Aquarium	1937 to 1943
VI.	JOHN TEE-VAN	
	Zoological Park	1952 to 1956
	General Director	1956 to 1962
VII.	CHRISTOPHER W. COATES	
	New York Aquarium	1956 to 1964
VIII.	JAMES A. OLIVER	
	Zoological Park	1958 to 1959
IX.	WILLIAM G. CONWAY	
	Zoological Park	1961
	General Director	1966
X.	PAUL L. MONTREUIL	
	New York Aquarium	1964 to 1966
XI.	ROSS F. NIGRELLI	
	New York Aquarium	1966

FELLOWS OF THE NEW YORK ZOOLOGICAL SOCIETY

Amadon, Dean
Anable, Mrs. Anthony
Anthony, H. E.
Antopol, William
Aronson, Lester R.
Atz, James W.
Beach, Frank A.
Bogert, Charles M.
Boyden, Alan
Breder, C. M., Jr.
Brown, M. Vertner
Budinger, John M.
Carpenter, C. R.
Carter, T. Donald
Cazier, Mont A.
Charipper, H. A.
Clark, James L.
Clarke, L. Floyd
Clausen, Lucy
Coates, Christopher W.
Colbert, Edwin H.
Conant, Roger
Conway, William
Coolidge, Harold J.
Cousteau, Jacques-Yves
Cox, Richard T.
Crandall, Lee S.
Crane, Jocelyn
Curran, C. H
Delacour, Jean
Dowling, Herndon G.
Elton, Charles
Emerson, Alfred E.
Enders, Robert K.
Fleming, Henry
Gandal, Charles P.
Gertsch, W. J.
Goodwin, George G.
Gorbman, Aubrey
Goss, Leonard J.
Gregory, William K.
Griffin, Donald R.
Haskins, Caryl P.
Hatt, Robert Torrens
Jakowska, Sophie
Kazimiroff, Theodore
LaMonte, Francesca R.
Lloyd, Hoyes
McClure, Gervase W.
Mayr, Ernst
Wallach, Jacques
Merriman, Daniel
Mettler, Fred A.
Murphy, Robert Cushman
Nachmansohn, David
Nigrelli, Ross F
Oliver, James A.
Parr, Albert Eide
Peterson, Roger Tory
Ponder, Eric
Pope, Clifford H.
Riess, Bernard F
Ripley, S. Dillon, 2nd
Schneirla, T. C.
Schroeder, Charles R.
Scott, J. Paul
Simon, James R.
Stunkard, Horace W
Talbot, Lee M.
Van Gelder, Richard G.
Vogt, William